

**REMARKS**

The final Office Action of October 17, 2006, has been received and reviewed.

Claims 1-63 are currently pending and under consideration in the above-referenced application. Each of claims 1-11, 20-31, 33-37, 40, 42-45, 57, 58, 61, and 63 has been rejected. Claims 12-19, 32, 38, 39, 41, 46-56, 59, 60, and 62 are each drawn to allowable subject matter.

Reconsideration of the above-referenced application is respectfully requested.

**Rejections under 35 U.S.C. § 102**

Claims 1, 2, 35-37, 57, and 58 have been rejected under 35 U.S.C. § 102(b) for reciting subject matter that is allegedly anticipated by the subject matter described in U.S.

Patent 5,506,607 to Sanders, Jr., et al. (hereinafter “Sanders”).

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single reference which qualifies as prior art under 35 U.S.C. § 102. *Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Sanders describes, among other things, a stereolithography apparatus in which a sheet of material, such as card stock or rigid polystyrene foam lamina, is applied with a modeling compound the surface of a thermally resistant base plate. Col. 13, line 30, to col. 14, line 11. The base plate of the stereolithography apparatus has a flat surface. Col. 13, line 40-41. It has been asserted that the sheet of material is analogous to the “substrate” mentioned in independent claim 1. Final Office Action, page 10. The sheet of material is secured to the flat surface of the base plate with a so-called modeling compound, or “MC.” Col. 13, lines 40-67.

As the surface of the base plate of Sanders is flat, and a separate modeling compound is required to secure the sheet of material to the surface, it is evident that Sanders lacks any express or inherent description of a support surface that includes “at least one feature configured to prevent lateral movement of . . . at least one substrate,” as would be required for Sanders to anticipate each and every element of independent claim 1, as amended and presented herein.

Therefore, under 35 U.S.C. § 102(b), the subject matter recited in independent claim 1 is allowable over the subject matter described in Sanders.

Each of claims 2 and 35-37 is allowable, among other reasons, for depending directly or indirectly from independent claim 1, which is allowable.

Claim 35 is additionally allowable since Sanders does not expressly or inherently describe an “ejection element.” Instead, the disclosure of Sanders is limited to use of heat, a solvent, or scraping to facilitate removal of the sheet of material from the heat resistant base plate. Col. 14, lines 14-46. The terms “remove” and “eject” have different meanings. Therefore, it is respectfully submitted that techniques, or even apparatus, for removing a sheet of material are not ejection elements, as required by claim 35.

The programmable material consolidation apparatus of independent claim 57 also includes an “ejection element.” Again, Sanders does not expressly or inherently describe an ejection element. Rather, the description of Sanders is limited to techniques and apparatus that facilitate the removal of a sheet of material from a base plate upon which the object is formed. As such, independent claim 57 recites subject matter that, under 35 U.S.C. § 102(b), is allowable over the subject matter described in Sanders.

Claim 58 is allowable, among other reasons, for depending directly from independent claim 57, which is allowable.

Withdrawal of the 35 U.S.C. § 102(b) rejections of claims 1, 2, 35-37, 57, and 58 is respectfully solicited, as is the allowance of each of these claims.

#### **Rejections under 35 U.S.C. § 103(a)**

Claims 3-11, 20-31, 33, 34, 40, 42-45, 61, and 63 stand rejected under 35 U.S.C. § 103(a).

The standard for establishing and maintaining a rejection under 35 U.S.C. § 103(a) is set forth in M.P.E.P. § 706.02(j), which provides:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally

available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Sanders in View of Tischler

Claims 3-9 and 43 are rejected under 35 U.S.C. § 103(a) for being directed to subject matter that is purportedly unpatentable over the subject matter taught in Sanders, in view of teachings from U.S. Patent Publication 2003/00114016 to Tischler (hereinafter "Tischler").

Each of claims 3-9 and 43 is allowable, among other reasons, for depending directly or indirectly from independent claim 1, which is allowable.

Claim 43 is further allowable because Sanders and Tischler both lack does not expressly or inherently describe a retention system that includes a locking ring. It has been asserted that the raised lip of the apparatus shown in Fig. 4 of Tischler is analogous to the locking ring recited in claim 43. It is respectfully submitted that the raised lip of the apparatus shown Fig. 4 of Tischler includes no locking feature and, therefore, could not be considered to anticipate the locking ring recited in claim 43.

It is further submitted that, without the benefit of hindsight that the claims of the above-referenced application have afforded, one of ordinary skill in the art wouldn't have been motivated to combine teachings from Sanders and Tischler in the manner that has been asserted. While it has been asserted that both Sanders and Tischler teach apparatus for carrying substrates, this purported basis for one of ordinary skill in the art to combine the teaching of Sanders and Tischler is not convincing.

Sanders teaches a stereolithography apparatus, and lacks any teaching or suggestion that the stereolithography apparatus may carry semiconductor substrates. Instead, Sanders merely teaches that a sheet of material may be secured to a fabrication support surface. Tischler, on the other hand, teaches an adapter that facilitates the placement of semiconductor substrates in

semiconductor device fabrication reactors that are configured to hold semiconductor substrates of different (larger) size.

Furthermore, as those of ordinary skill in the art are aware, reactors of the type with which the wafer handling system of Tischler is configured for use are configured to provide an environment (including the generation of an electrical bias, or voltage) in which desired chemical reactions may be effected over substrates. In contrast, the stereolithography apparatus of Sanders is used to form models in a layer-by-layer fashion, with an object under fabrication being submerged into a bath of liquid material as each successive layer of a model is formed.

Also for these reasons, one of ordinary skill in the art would have no reason to expect that the wafer handling system of Tischler could be used with the stereolithography apparatus of Sanders.

As such, it is respectfully submitted that a *prima facie* case of obviousness has not been established against any of claims 3-9 or 43.

Sanders, Tischler, and Jensen

Claims 10 and 11 have been rejected under 35 U.S.C. § 103(a) for being directed to subject matter which is allegedly unpatentable over the subject matter taught in Sanders, in view of teachings from Tischler and, further, in view of teachings from U.S. Patent Publication 2001/0032111 to Jensen, Jr. et al. (hereinafter "Jensen").

Each of claims 10 and 11 is allowable, among other reasons, for depending indirectly from independent claim 1, which is allowable.

Claims 10 and 11 are also allowable since no combination of teachings from Sanders, Tischler, and Jensen could be used to establish a *prima facie* case of obviousness. In particular, without the benefit of hindsight, one of ordinary skill in the art wouldn't have been motivated to combine the teachings of Sanders, which relate to stereolithography apparatus, with teachings from Tischler, which relate to wafer carriers that are configured for use in epitaxial thin film deposition reactors, and the teachings of Jensen, which are directed to material deposition, or so-called "three-dimensional printing," processes for fabricating polishing pads. More specifically, without the benefit of hindsight that the claims and specification of the

above-referenced application afford, it is not understood how or why one of ordinary skill in the art would have been motivated to use either stereolithography or three-dimensional printing processes to fabricate an object upon a wafer carrier that is configured for use in an epitaxial thin film deposition reactor.

Therefore, it is respectfully submitted that claims 10 and 11 are both is drawn to subject matter that is allowable under 35 U.S.C. § 103(a).

Sanders in View of Cheng

Claims 20-26 stand rejected under 35 U.S.C. § 103(a) for being directed to subject matter which is allegedly unpatentable over the subject matter taught in Sanders, in view of teachings from U.S. Patent 5,304,248 to Cheng et al. (hereinafter “Cheng”).

Claims 20-26 are each allowable, among other reasons, for depending directly or indirectly from independent claim 1, which is allowable.

Moreover, it is respectfully submitted that, without the benefit of hindsight that has been provided by the claims of the above-referenced application, one of ordinary skill in the art wouldn't have been motivated to combine teachings from Sanders and Cheng in the manner that has been asserted. Like the teachings of Tischler, the teachings of Cheng relate to apparatus that are useful within the chambers of reactors that generate chemical reactions that result in the indiscriminate deposition of materials upon substrates, whereas Sanders teaches an apparatus in which an object may be fabricated in accordance with a program.

Therefore, it is respectfully submitted that a *prima facie* case of obviousness has not been established against any of claims 20-26.

Sanders, Tischler, and Cheng

Claims 44 and 45 are rejected under 35 U.S.C. § 103(a) for being drawn to subject matter that is assertedly unpatentable over the subject matter taught in Sanders, in view of the teachings from Tischler and, further, in view of the teachings of Cheng.

Claims 44 and 45 are allowable, among other reasons, for respectively depending indirectly from independent claim 1, which is allowable.

Additionally, Tischler does not provide any motivation for one of ordinary skill in the art to combine its teachings or those of Cheng, which relate to apparatus for use with material deposition reactors, with the teachings of Sanders, which relate to stereolithography apparatus.

Sanders, Cheng, and Jensen

Claims 27-31 and 34 are rejected under 35 U.S.C. § 103(a) for reciting subject matter which is purportedly unpatentable over that taught in Sanders, in view of teachings from Cheng and, further, in view of the teachings of Jensen.

Each of claims 27-31 and 34 is allowable, among other reasons, for depending indirectly from claim 1, which is allowable.

In addition, it is respectfully submitted, that for the same reasons presented above, one of ordinary skill in the art wouldn't have been motivated to combine teachings from Sanders with teachings from Cheng. Jensen does not provide any teachings or suggestions that would remedy the aforementioned deficiencies of this asserted combination.

Thus, under 35 U.S.C. § 103(a), the subject matter recited in each of claims 27-31 and 34 is allowable over the teachings of Sanders, Cheng, and Jensen.

Sanders in View of Jensen

Claims 40, 42, 61, and 63 stand rejected under 35 U.S.C. § 103(a) for reciting subject matter that is purportedly unpatentable over the subject matter taught in Sanders, in view of teachings from Jensen.

Both claim 40 and claim 42 are allowable, among other reasons, for depending indirectly from independent claim 1, which is allowable.

Claims 61 and 63 are both allowable, among other reasons, for depending directly or indirectly from independent claim 57, which is allowable.

Sanders, Cheng, Jensen, and Tischler

Claim 33 is rejected under 35 U.S.C. 103(a) for being drawn to subject matter that is allegedly unpatentable over the subject matter taught in Sanders, in view of the teachings from Cheng, Jensen, and Tischler.

Claim 33 is allowable, among other reasons, for depending indirectly from independent claim 1, which is allowable.

Claim 33 is further allowable because Sanders, Cheng, Jensen, and Tischler each lack any teaching or suggestion of an ejection element that is configured to facilitate grasping of at least one substrate positioned over a support surface. Instead of teaching an ejection element, the teachings of Tischler are limited to use of a conventional vacuum pick-up head to remove a wafer from the carrier disclosed therein. *See* Tischler, paragraph [0060].

Withdrawal of the 35 U.S.C. § 103(a) rejections of claims 3-11, 20-31, 33, 34, 40, 42-45, 61, and 63 is respectfully solicited, as is the allowance of each of these claims.

**Allowable Subject Matter**

The indication that claims 12-19, 32, 38, 39, 41, 46-56, 59, 60, and 62 recite allowable subject matter is gratefully acknowledged. Nonetheless, none of these claims has been amended to independent form, as the claims from which they depend are also believed to be allowable.

**Entry of Amendments**

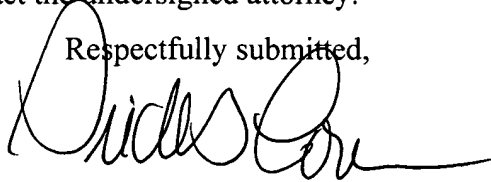
Entry of the proposed amendment to independent claim 1 is respectfully requested. It is respectfully submitted that amending independent claim 1 in the manner that has been proposed would not introduce new matter into the above-referenced application or necessitate an additional search.

In the event that a decision is made not to enter the proposed claim amendment, entry thereof upon the filing of a Notice of Appeal in the above-referenced application is respectfully requested.

**CONCLUSION**

It is respectfully submitted that each of claims 1-63 is allowable. An early notice of the allowability of each of these claims is respectfully solicited, as is an indication that the above-referenced application has been passed for issuance. If any issues preventing allowance of the above-referenced application remain which might be resolved by way of a telephone conference, the Office is kindly invited to contact the undersigned attorney.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Brick G. Power", written over the typed name.

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